

SEQUENCE LISTING



<110> Pasternack, Gary R.  
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Kodkole, Shrihari S.  
The Johns Hopkins University

<120> GENE FAMILY WITH TRANSFORMATION MODULATING ACTIVITY

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<140> PCT/US98/26433

<141> 1998-12-11

<150> 60/069,677

<151> 1997-12-12

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<170> PatentIn Ver. 2.0 - beta

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Thr Ile Asn Ile Gly Leu Thr Ser Ile Ala Asn Leu Pro Lys Leu Asn  
50 55 60  
Lys Leu Lys Lys Leu Glu Leu Ser Ser Asn Arg Ala Ser Val Gly Leu  
65 70 75 80  
Glu Val Leu Ala Glu Lys Cys Pro Asn Leu Ile His Leu Asn Leu Ser  
85 90 95  
Gly Asn Lys Ile Lys Asp Leu Ser Thr Ile Glu Pro Leu Lys Lys Leu  
100 105 110  
Glu Asn Leu Glu Ser Leu Asp Leu Phe Thr Cys Glu Val Thr Asn Leu  
115 120 125  
Asn Asn  
130

*2nd*  
*Ab*  
*7*

<210> 9  
<211> 907  
<212> DNA  
<213> Homo sapiens

<220>  
<221> CDS  
<222> (66)..(812)

<400> 9  
gggttcgggg tttattgatt gaattccgcc ggcgcgaggag cctctgcaga gagagagcgc 60  
gagag atg gag atg ggc aga cgg att cat tta gag ctg cgg aac agg acg 110  
Met Glu Met Gly Arg Arg Ile His Leu Glu Leu Arg Asn Arg Thr  
1 5 10 15

ccc tct gat gtg aaa gaa ctt gtc ctg gac aac agt cgg tcg aat gaa 158  
Pro Ser Asp Val Lys Glu Leu Val Leu Asp Asn Ser Arg Ser Asn Glu  
20 25 30

ggc aaa ctc gaa ggc ctc aca gat gaa ttt gaa gaa ctg gaa ttc tta 206  
Gly Lys Leu Glu Gly Leu Thr Asp Glu Phe Glu Glu Leu Glu Phe Leu  
35 40 45

agt aca atc aac gta ggc ctc acc tca atc gca aac ttg cca aag tta 254  
Ser Thr Ile Asn Val Gly Leu Thr Ser Ile Ala Asn Leu Pro Lys Leu  
50 55 60

aac aaa ctt aag aag ctt gaa cta agc agt aac aga gcc tca gtg ggc 302  
Asn Lys Leu Lys Lys Leu Glu Leu Ser Ser Asn Arg Ala Ser Val Gly  
65 70 75

cta gaa gta ttg gca gaa aag tgt cca aac ctc ata cat cta aat tta 350  
Leu Glu Val Leu Ala Glu Lys Cys Pro Asn Leu Ile His Leu Asn Leu  
80 85 90 95

agt ggc aac aaa att aaa gac ctc agc aca ata gag cca ctg aaa aag 398  
Ser Gly Asn Lys Ile Lys Asp Leu Ser Thr Ile Glu Pro Leu Lys Lys  
100 105 110

tta gaa aac ctc aag agc tta gac ctt tcc aat tgc gag gta acc aac 446  
Leu Glu Asn Leu Lys Ser Leu Asp Leu Ser Asn Cys Glu Val Thr Asn  
115 120 125

ctg aac gac tac cga gaa aat gtg ttc aag ctc ctc ccg caa ctc aca 494  
Leu Asn Asp Tyr Arg Glu Asn Val Phe Lys Leu Leu Pro Gln Leu Thr  
130 135 140

tat ctc gac ggc tat gac cgg gac gac aag gag gcc cct gac tcg gat 542  
Tyr Leu Asp Gly Tyr Asp Arg Asp Asp Lys Glu Ala Pro Asp Ser Asp  
145 150 155

gct gag ggc tac gtg gag ggc ctg gat gat gag gag gag gat gag gat 590  
Ala Glu Gly Tyr Val Glu Gly Leu Asp Asp Glu Glu Glu Asp Glu Asp  
160 165 170 175

gag gag gag tat gat gaa gat gct cag gta gta gaa gat gag gag gac 638  
Glu Glu Glu Tyr Asp Glu Asp Ala Gln Val Val Glu Asp Glu Glu Asp  
180 185 190

gag gat gag gag gag gaa ggt gaa gag gag gac gtg agt gga gag gag 686  
Glu Asp Glu Glu Glu Glu Gly Glu Glu Asp Val Ser Gly Glu Glu  
195 200 205

gag gag gat gaa gaa ggt tat aac gat gga gag gta gat gac gag gaa 734

Glu Glu Asp Glu Glu Gly Tyr Asn Asp Gly Glu Val Asp Asp Glu Glu  
 210 215 220

gat gaa gaa gag ctt ggt gaa gaa gaa agg ggt cag aag cga aaa cga 782  
 Asp Glu Glu Glu Leu Gly Glu Glu Glu Arg Gly Gln Lys Arg Lys Arg  
 225 230 235

gaa cct gaa gat gag gga gaa gat gat gac taagtgggaat aacctatttt 832  
 Glu Pro Glu Asp Glu Gly Glu Asp Asp Asp  
 240 245

gaaaaattcc tattgtgatt tgactgtttt tacccatata ccctctcccc cccccctcta 892  
 atcctgcccc ctgaa 907

<210> 10  
 <211> 249  
 <212> PRT  
 <213> Homo sapiens

<400> 10  
 Met Glu Met Gly Arg Arg Ile His Leu Glu Leu Arg Asn Arg Thr Pro  
 1 5 10 15

Ser Asp Val Lys Glu Leu Val Leu Asp Asn Ser Arg Ser Asn Glu Gly  
 20 25 30

Lys Leu Glu Gly Leu Thr Asp Glu Phe Glu Glu Leu Glu Phe Leu Ser  
 35 40 45

Thr Ile Asn Val Gly Leu Thr Ser Ile Ala Asn Leu Pro Lys Leu Asn  
 50 55 60

Lys Leu Lys Lys Leu Glu Leu Ser Ser Asn Arg Ala Ser Val Gly Leu  
 65 70 75 80

Glu Val Leu Ala Glu Lys Cys Pro Asn Leu Ile His Leu Asn Leu Ser  
 85 90 95

Gly Asn Lys Ile Lys Asp Leu Ser Thr Ile Glu Pro Leu Lys Lys Leu  
 100 105 110

Glu Asn Leu Lys Ser Leu Asp Leu Ser Asn Cys Glu Val Thr Asn Leu  
 115 120 125

Asn Asp Tyr Arg Glu Asn Val Phe Lys Leu Leu Pro Gln Leu Thr Tyr  
 130 135 140

Leu Asp Gly Tyr Asp Arg Asp Asp Lys Glu Ala Pro Asp Ser Asp Ala

145

150

155

160

Glu Gly Tyr Val Glu Gly Leu Asp Asp Glu Glu Glu Asp Glu Asp Glu  
165 170 175

Glu Glu Tyr Asp Glu Asp Ala Gln Val Val Glu Asp Glu Glu Asp Glu  
180 185 190

Asp Glu Glu Glu Glu Gly Glu Glu Glu Asp Val Ser Gly Glu Glu Glu  
195 200 205

Glu Asp Glu Glu Gly Tyr Asn Asp Gly Glu Val Asp Asp Glu Glu Asp  
210 215 220

Glu Glu Glu Leu Gly Glu Glu Glu Arg Gly Gln Lys Arg Lys Arg Glu  
225 230 235 240

Pro Glu Asp Glu Gly Glu Asp Asp Asp  
245

&lt;210&gt; 11

&lt;211&gt; 905

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; CDS

&lt;222&gt; (64)..(810)

&lt;400&gt; 11

gggttcgggg tttattgggtt gaattccgct ggctcaggag cctctgcaga gaaagcgtga 60

gag atg gag atg ggc aaa tgg att cat tta gag ctg cgg aac agg acg 108  
Met Glu Met Gly Lys Trp Ile His Leu Glu Leu Arg Asn Arg Thr  
1 5 10 15

ccc tcc gat gtg aaa gaa ctt ttc ctg gac aac agt cag tca aat gaa 156  
Pro Ser Asp Val Lys Glu Leu Phe Leu Asp Asn Ser Gln Ser Asn Glu  
20 25 30

ggc aaa ttg gaa ggc ctc aca gat gaa ttt gaa gaa ctg gaa tta tta 204  
Gly Lys Leu Glu Gly Leu Thr Asp Glu Phe Glu Glu Leu Glu Leu Leu  
35 40 45

aat aca atc aac ata ggc ctc acc tca att gca aac ttg cca aag tta 252  
Asn Thr Ile Asn Ile Gly Leu Thr Ser Ile Ala Asn Leu Pro Lys Leu  
50 55 60

aac aaa ctt aag aag ctt gaa cta agc agt aac aga gcc tca gtg ggc 300

Asn Lys Leu Lys Lys Leu Glu Leu Ser Ser Asn Arg Ala Ser Val Gly  
 65 70 75

cta gaa gta ttg gca gaa aag tgt cca aac ctc ata cat cta aat tta 348  
 Leu Glu Val Leu Ala Glu Lys Cys Pro Asn Leu Ile His Leu Asn Leu  
 80 85 90 95

agt ggc aac aaa att aaa gac ctc agc aca ata gag ccc ctg aaa aag 396  
 Ser Gly Asn Lys Ile Lys Asp Leu Ser Thr Ile Glu Pro Leu Lys Lys  
 100 105 110

tta gaa aac ctc gag agc tta gac ctt ttc act tgc gag gta acc aac 444  
 Leu Glu Asn Leu Glu Ser Leu Asp Leu Phe Thr Cys Glu Val Thr Asn  
 115 120 125

ctg aac aac tac cga gaa aat gtg ttc aag ctc ctc ccg caa ctc aca 492  
 Leu Asn Asn Tyr Arg Glu Asn Val Phe Lys Leu Leu Pro Gln Leu Thr  
 130 135 140

tat ctc gac ggc tat gac cgg gac gac aag gag gcc cct gac tcg gat 540  
 Tyr Leu Asp Gly Tyr Asp Arg Asp Asp Lys Glu Ala Pro Asp Ser Asp  
 145 150 155

gct gag ggc tac gtg gag ggc ctg gat gat gag gag gag gat gag gat 588  
 Ala Glu Gly Tyr Val Glu Gly Leu Asp Asp Glu Glu Glu Asp Glu Asp  
 160 165 170 175

*and*  
 gag gag gag tat gat gaa gat gct cag gta gtg gaa gac gag gag gac 636  
 Glu Glu Glu Tyr Asp Glu Asp Ala Gln Val Val Glu Asp Glu Glu Asp  
 180 185 190

*AB*  
*1*  
 gag gat gag gag gag gaa ggt gaa gag gag gac gtg agt gga gag gag 684  
 Glu Asp Glu Glu Glu Glu Gly Glu Glu Glu Asp Val Ser Gly Glu Glu  
 195 200 205

gag gag gat gaa gaa ggt tat aac gat gga gag gta gat gac gag gaa 732  
 Glu Glu Asp Glu Glu Gly Tyr Asn Asp Gly Glu Val Asp Asp Glu Glu  
 210 215 220

gat gaa gaa gag ctt ggt gaa gaa gaa agg ggt cag aag cga aaa cga 780  
 Asp Glu Glu Glu Leu Gly Glu Glu Glu Arg Gly Gln Lys Arg Lys Arg  
 225 230 235

gaa cct gaa gat gag gga gaa gat gat gac taagtggaaat aacctatatt 830  
 Glu Pro Glu Asp Glu Gly Glu Asp Asp Asp  
 240 245

gaaaaattcc tattgtgatt tgactgtttt tacccatata cctctcccc cccccctcta 890

atcctgcccc ctgaa 905



<210> 12  
<211> 249  
<212> PRT  
<213> Homo sapiens

<400> 12  
Met Glu Met Gly Lys Trp Ile His Leu Glu Leu Arg Asn Arg Thr Pro  
1 5 10 15  
Ser Asp Val Lys Glu Leu Phe Leu Asp Asn Ser Gln Ser Asn Glu Gly  
20 25 30  
Lys Leu Glu Gly Leu Thr Asp Glu Phe Glu Glu Leu Glu Leu Leu Asn  
35 40 45  
Thr Ile Asn Ile Gly Leu Thr Ser Ile Ala Asn Leu Pro Lys Leu Asn  
50 55 60  
Lys Leu Lys Lys Leu Glu Leu Ser Ser Asn Arg Ala Ser Val Gly Leu  
65 70 75 80  
Glu Val Leu Ala Glu Lys Cys Pro Asn Leu Ile His Leu Asn Leu Ser  
85 90 95  
Gly Asn Lys Ile Lys Asp Leu Ser Thr Ile Glu Pro Leu Lys Lys Leu  
100 105 110  
Glu Asn Leu Glu Ser Leu Asp Leu Phe Thr Cys Glu Val Thr Asn Leu  
115 120 125  
Asn Asn Tyr Arg Glu Asn Val Phe Lys Leu Leu Pro Gln Leu Thr Tyr  
130 135 140  
Leu Asp Gly Tyr Asp Arg Asp Asp Lys Glu Ala Pro Asp Ser Asp Ala  
145 150 155 160  
Glu Gly Tyr Val Glu Gly Leu Asp Asp Glu Glu Glu Asp Glu Asp Glu  
165 170 175  
Glu Glu Tyr Asp Glu Asp Ala Gln Val Val Glu Asp Glu Glu Asp Glu  
180 185 190  
Asp Glu Glu Glu Glu Gly Glu Glu Glu Asp Val Ser Gly Glu Glu Glu  
195 200 205  
Glu Asp Glu Glu Gly Tyr Asn Asp Gly Glu Val Asp Asp Glu Glu Asp  
210 215 220

Glu Glu Glu Leu Gly Glu Glu Glu Arg Gly Gln Lys Arg Lys Arg Glu  
 225 230 235 240

Pro Glu Asp Glu Gly Glu Asp Asp Asp  
 245

<210> 13  
 <211> 907  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> CDS  
 <222> (66)..(812)

<400> 13  
 ggggttcggggg tttattgatt gaattccgcc ggcgcgggag cctctgcaga gagagagcgc 60

gagag atg gag atg ggc aga cgg att cat tta gag ctg cgg aac agg acg 110  
 Met Glu Met Gly Arg Arg Ile His Leu Glu Leu Arg Asn Arg Thr  
 1 5 10 15

ccc tct gat gtg aaa gaa ctt gtc ctg gac aac agt cgg tcg aat gaa 158  
 Pro Ser Asp Val Lys Glu Leu Val Leu Asp Asn Ser Arg Ser Asn Glu  
 20 25 30

ggc aaa ctc gaa ggc ctc aca gat gaa ttt gaa gaa ctg gaa ttc tta 206  
 Gly Lys Leu Glu Gly Leu Thr Asp Glu Phe Glu Glu Leu Glu Phe Leu  
 35 40 45

agt aca atc aac gta ggc ctc acc tca atc gca aac tta cca aag tta 254  
 Ser Thr Ile Asn Val Gly Leu Thr Ser Ile Ala Asn Leu Pro Lys Leu  
 50 55 60

aac aaa ctt aag aag ctt gaa cta agc gat aac aga gtc tca ggg ggc 302  
 Asn Lys Leu Lys Lys Leu Glu Leu Ser Asp Asn Arg Val Ser Gly Gly  
 65 70 75

ctg gaa gta ttg gca gaa aag tgt ccg aac ctc acg cat cta aat tta 350  
 Leu Glu Val Leu Ala Glu Lys Cys Pro Asn Leu Thr His Leu Asn Leu  
 80 85 90 95

agt ggc aac aaa att aaa gac ctc agc aca ata gag cca ctg aaa aag 398  
 Ser Gly Asn Lys Ile Lys Asp Leu Ser Thr Ile Glu Pro Leu Lys Lys  
 100 105 110

tta gaa aac ctc aag agc tta gac ctt ttc aat tgc gag gta acc aac 446  
 Leu Glu Asn Leu Lys Ser Leu Asp Leu Phe Asn Cys Glu Val Thr Asn  
 115 120 125

ctg aac gac tac cga gaa aat gtg ttc aag ctc ctc ccg caa ctc aca 494  
 Leu Asn Asp Tyr Arg Glu Asn Val Phe Lys Leu Leu Pro Gln Leu Thr  
 130 135 140

tat ctc gac ggc tat gac cgg gac gac aag gag gcc cct gac tcg gat 542  
 Tyr Leu Asp Gly Tyr Asp Arg Asp Asp Lys Glu Ala Pro Asp Ser Asp  
 145 150 155

gct gag ggc tac gtg gag ggc ctg gat gat gag gag gag gat gag gat 590  
 Ala Glu Gly Tyr Val Glu Gly Leu Asp Asp Glu Glu Glu Asp Glu Asp  
 160 165 170 175

gag gag gag tat gat gaa gat gct cag gta gtg gaa gac gag gag gac 638  
 Glu Glu Glu Tyr Asp Glu Asp Ala Gln Val Val Glu Asp Glu Glu Asp  
 180 185 190

gag gat gag gag gag gaa ggt gaa gag gag gac gtg agt gga gag gag 686  
 Glu Asp Glu Glu Glu Glu Gly Glu Glu Glu Asp Val Ser Gly Glu Glu  
 195 200 205

gag gag gat gaa gaa ggt tat aac gat gga gag gta gat gac gag gaa 734  
 Glu Glu Asp Glu Glu Gly Tyr Asn Asp Gly Glu Val Asp Asp Glu Glu  
 210 215 220

gat gaa gaa gag ctt ggt gaa gaa gaa agg ggt cag aag cga aaa cga 782  
 Asp Glu Glu Glu Leu Gly Glu Glu Glu Arg Gly Gln Lys Arg Lys Arg  
 225 230 235

gaa cct gaa gat gag gga gaa gat gat gac taagtgaat aacctatattt 832  
 Glu Pro Glu Asp Glu Gly Glu Asp Asp Asp  
 240 245

gaaaaattcc tattgtgatt tgactgtttt tacccatata ccctctcccc cccccctcta 892

atcctgcccc ctgaa 907

<210> 14  
 <211> 249  
 <212> PRT  
 <213> Homo sapiens

<400> 14  
 Met Glu Met Gly Arg Arg Ile His Leu Glu Leu Arg Asn Arg Thr Pro  
 1 5 10 15  
 Ser Asp Val Lys Glu Leu Val Leu Asp Asn Ser Arg Ser Asn Glu Gly  
 20 25 30

Lys Leu Glu Gly Leu Thr Asp Glu Phe Glu Glu Leu Glu Phe Leu Ser  
 35 40 45  
 Thr Ile Asn Val Gly Leu Thr Ser Ile Ala Asn Leu Pro Lys Leu Asn  
 50 55 60  
 Lys Leu Lys Lys Leu Glu Leu Ser Asp Asn Arg Val Ser Gly Gly Leu  
 65 70 75 80  
 Glu Val Leu Ala Glu Lys Cys Pro Asn Leu Thr His Leu Asn Leu Ser  
 85 90 95  
 Gly Asn Lys Ile Lys Asp Leu Ser Thr Ile Glu Pro Leu Lys Lys Leu  
 100 105 110  
 Glu Asn Leu Lys Ser Leu Asp Leu Phe Asn Cys Glu Val Thr Asn Leu  
 115 120 125  
 Asn Asp Tyr Arg Glu Asn Val Phe Lys Leu Leu Pro Gln Leu Thr Tyr  
 130 135 140  
 Leu Asp Gly Tyr Asp Arg Asp Asp Lys Glu Ala Pro Asp Ser Asp Ala  
 145 150 155 160  
 Glu Gly Tyr Val Glu Gly Leu Asp Asp Glu Glu Glu Asp Glu Asp Glu  
 165 170 175  
 Glu Glu Tyr Asp Glu Asp Ala Gln Val Val Glu Asp Glu Glu Asp Glu  
 180 185 190  
 Asp Glu Glu Glu Gly Glu Glu Glu Asp Val Ser Gly Glu Glu Glu  
 195 200 205  
 Glu Asp Glu Glu Gly Tyr Asn Asp Gly Glu Val Asp Asp Glu Glu Asp  
 210 215 220  
 Glu Glu Glu Leu Gly Glu Glu Glu Arg Gly Gln Lys Arg Lys Arg Glu  
 225 230 235 240  
 Pro Glu Asp Glu Gly Glu Asp Asp Asp  
 245

<210> 15  
 <211> 895  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> CDS

<222> (66)..(767)

<400> 15

gggttcggggg tttattgatt gaattcggct ggcacgagag cctctgcaga cagagagcgc 60

gagag atg gag atg ggc aga cgg att cat tca gag ctg cgg aac agg gcg 110  
Met Glu Met Gly Arg Arg Ile His Ser Glu Leu Arg Asn Arg Ala  
1 5 10 15

ccc tct gat gtg aaa gaa ctt gcc ctg gac aac agt cgg tcg aat gaa 158  
Pro Ser Asp Val Lys Glu Leu Ala Leu Asp Asn Ser Arg Ser Asn Glu  
20 25 30

ggc aaa ctc gaa gcc ctc aca gat gaa ttt gaa gaa ctg gaa ttc tta 206  
Gly Lys Leu Glu Ala Leu Thr Asp Glu Phe Glu Glu Leu Glu Phe Leu  
35 40 45

agt aaa atc aac gga ggc ctc acc tca atc tca gac tta cca aag tta 254  
Ser Lys Ile Asn Gly Gly Leu Thr Ser Ile Ser Asp Leu Pro Lys Leu  
50 55 60

aag ttg aga aag ctt gaa cta aga gtc tca ggg ggc ctg gaa gta ttg 302  
Lys Leu Arg Lys Leu Glu Leu Arg Val Ser Gly Gly Leu Glu Val Leu  
65 70 75

gca gaa aag tgt cca aac ctc acg cat cta tat tta agt ggc aac aaa 350  
Ala Glu Lys Cys Pro Asn Leu Thr His Leu Tyr Leu Ser Gly Asn Lys  
80 85 90 95

*One*  
*Ab*  
att aaa gac ctc agc aca ata gag cca ctg aaa cag tta gaa aac ctc 398  
Ile Lys Asp Leu Ser Thr Ile Glu Pro Leu Lys Gln Leu Glu Asn Leu  
100 105 110

aag agc tta gac ctt ttc aat tgc gag gta acc aac ctg aac gac tac 446  
Lys Ser Leu Asp Leu Phe Asn Cys Glu Val Thr Asn Leu Asn Asp Tyr  
115 120 125

gga gaa aac gtg ttc aag ctt ctc ctg caa ctc aca tat ctc gac agc 494  
Gly Glu Asn Val Phe Lys Leu Leu Leu Gln Leu Thr Tyr Leu Asp Ser  
130 135 140

tgt tac tgg gac cac aag gag gcc cct tac tca gat att gag gac cac 542  
Cys Tyr Trp Asp His Lys Glu Ala Pro Tyr Ser Asp Ile Glu Asp His  
145 150 155

gtg gag ggc ctg gat gac gag gag gag ggt gag cat gag gag gag tat 590  
Val Glu Gly Leu Asp Asp Glu Glu Glu Gly Glu His Glu Glu Glu Tyr  
160 165 170 175

gat gaa gat gct cag gta gtg gaa gat gag gag ggc gag gag gag gag 638

Asp Glu Asp Ala Gln Val Val Glu Asp Glu Glu Gly Glu Glu Glu Glu  
 180 185 190

gag gaa ggt gaa gag gag gac gtg agt gga ggg gac ggg gag gat gaa 686  
 Glu Glu Gly Glu Glu Glu Asp Val Ser Gly Gly Asp Gly Glu Asp Glu  
 195 200 205

gaa ggt tat aac gat gga gag gta gat ggc gag gaa gat gaa gaa gag 734  
 Glu Gly Tyr Asn Asp Gly Glu Val Asp Gly Glu Glu Asp Glu Glu Glu  
 210 215 220

ctt ggt gaa gaa gaa agg ggt cag aag cga aaa tgagaacctg aagatgaggg 787  
 Leu Gly Glu Glu Glu Arg Gly Gln Lys Arg Lys  
 225 230

agaagatgat gactaagtag aataacctat ttgaaaaat tcctattgtg atttgactgt 847

ttttacccat atcccatctc cccccccct ctaatcctgc cccctgaa 895

<210> 16

<211> 234

<212> PRT

<213> Homo sapiens

<400> 16

Met Glu Met Gly Arg Arg Ile His Ser Glu Leu Arg Asn Arg Ala Pro  
 1 5 10 15

Ser Asp Val Lys Glu Leu Ala Leu Asp Asn Ser Arg Ser Asn Glu Gly  
 20 25 30

Lys Leu Glu Ala Leu Thr Asp Glu Phe Glu Glu Leu Glu Phe Leu Ser  
 35 40 45

Lys Ile Asn Gly Gly Leu Thr Ser Ile Ser Asp Leu Pro Lys Leu Lys  
 50 55 60

Leu Arg Lys Leu Glu Leu Arg Val Ser Gly Gly Leu Glu Val Leu Ala  
 65 70 75 80

Glu Lys Cys Pro Asn Leu Thr His Leu Tyr Leu Ser Gly Asn Lys Ile  
 85 90 95

Lys Asp Leu Ser Thr Ile Glu Pro Leu Lys Gln Leu Glu Asn Leu Lys  
 100 105 110

Ser Leu Asp Leu Phe Asn Cys Glu Val Thr Asn Leu Asn Asp Tyr Gly  
 115 120 125

Glu Asn Val Phe Lys Leu Leu Leu Gln Leu Thr Tyr Leu Asp Ser Cys  
130 135 140

Tyr Trp Asp His Lys Glu Ala Pro Tyr Ser Asp Ile Glu Asp His Val  
145 150 155 160

Glu Gly Leu Asp Asp Glu Glu Glu Gly Glu His Glu Glu Glu Tyr Asp  
165 170 175

Glu Asp Ala Gln Val Val Glu Asp Glu Glu Gly Glu Glu Glu Glu  
180 185 190

Glu Gly Glu Glu Glu Asp Val Ser Gly Gly Asp Gly Glu Asp Glu Glu  
195 200 205

Gly Tyr Asn Asp Gly Glu Val Asp Gly Glu Glu Asp Glu Glu Glu Leu  
210 215 220

Gly Glu Glu Glu Arg Gly Gln Lys Arg Lys  
225 230

<210> 17

<211> 905

<212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (64)..(453)

<400> 17

gggttcgggg tttattgggtt gaattccgct ggctcgagag cctctggaga gaaagcgtga 60

gag atg gag atg ggc aaa tgg att cat tta gag ctg cgg aac agg acg 108  
Met Glu Met Gly Lys Trp Ile His Leu Glu Leu Arg Asn Arg Thr  
1 5 10 15

ccc tcc gat gtg aaa gaa ctt ttc ctg gac aac agt cag tca aat gaa 156  
Pro Ser Asp Val Lys Glu Leu Phe Leu Asp Asn Ser Gln Ser Asn Glu  
20 25 30

ggc aaa ttg gaa ggc ctc aca gat gaa ttt gag gaa ctg gaa tta tta 204  
Gly Lys Leu Glu Gly Leu Thr Asp Glu Phe Glu Glu Leu Glu Leu Leu  
35 40 45

aat aca atc aac ata ggc ctc acc tca att gca aac ttg cca aag tta 252  
Asn Thr Ile Asn Ile Gly Leu Thr Ser Ile Ala Asn Leu Pro Lys Leu  
50 55 60

aac aaa ctt aag aag ctt gaa cta agc agt aac aga gcc tca gtg ggc 300  
 Asn Lys Leu Lys Lys Leu Glu Leu Ser Ser Asn Arg Ala Ser Val Gly  
 65 70 75

cta gaa gta ttg gca gaa aag tgt cca aac ctc ata cat cta aat tta 348  
 Leu Glu Val Leu Ala Glu Lys Cys Pro Asn Leu Ile His Leu Asn Leu  
 80 85 90 95

agt gcc aac aaa att aaa gac ctc agc aca ata gag ccc ctg aaa aag 396  
 Ser Gly Asn Lys Ile Lys Asp Leu Ser Thr Ile Glu Pro Leu Lys Lys  
 100 105 110

tta gaa aac ctt gag agc tta gac ctt ttc act tgc gag gta acc aac 444  
 Leu Glu Asn Leu Glu Ser Leu Asp Leu Phe Thr Cys Glu Val Thr Asn  
 115 120 125

ctg aac aac tactgagaaa agatgttcaa gctcctcctg caactcacat 493  
 Leu Asn Asn  
 130

atctcaacgg ctgtgacccg gatgacaagg aggcccttaa ctcggatggt gagggctacg 553

tggagggcct ggacgatgag gaggaggatg aggatgagga ggagtatgat gaagatgctc 613

aggtagtgga agacgaggag gacgaggatg aggaggagga aggtgaagag gaggacgtga 673

gtggagagga ggaggaggat gaagaagggtt ataacgatgg agaggtagat gacgaggaag 733

atgaagaaga gcttggtgaa gaagaaaggg gtcagaagcg aaaacgagaa cctgaagatg 793

agggagaaga tgatgactaa gtggaataac ctattttgaa aaattcctat tgtgatttga 853

ctgttttttag ccgtatcccc tctccccccc cactctaate ctgccccctg aa 905

<210> 18

<211> 130

<212> PRT

<213> Homo sapiens

<400> 18

Met Glu Met Gly Lys Trp Ile His Leu Glu Leu Arg Asn Arg Thr Pro  
 1 5 10 15

Ser Asp Val Lys Glu Leu Phe Leu Asp Asn Ser Gln Ser Asn Glu Gly  
 20 25 30

Lys Leu Glu Gly Leu Thr Asp Glu Phe Glu Glu Leu Glu Leu Leu Asn  
 35 40 45



Thr Ile Asn Ile Gly Leu Thr Ser Ile Ala Asn Leu Pro Lys Leu Asn  
50 55 60

Lys Leu Lys Lys Leu Glu Leu Ser Ser Asn Arg Ala Ser Val Gly Leu  
65 70 75 80

Glu Val Leu Ala Glu Lys Cys Pro Asn Leu Ile His Leu Asn Leu Ser  
85 90 95

Gly Asn Lys Ile Lys Asp Leu Ser Thr Ile Glu Pro Leu Lys Lys Leu  
100 105 110

Glu Asn Leu Glu Ser Leu Asp Leu Phe Thr Cys Glu Val Thr Asn Leu  
115 120 125

Asn Asn  
130

<210> 19  
<211> 905  
<212> DNA  
<213> Homo sapiens

<220>  
<221> CDS  
<222> (64)..(453)

*One  
H6  
7*  
<400> 19  
gggttcgggg tttattgggt gaattccgct ggctcaggag cctctgcaga gaaagcgtga 60

gag atg gag atg ggc aaa tgg att cat tta gag ctg cgg aac agg acg 108  
Met Glu Met Gly Lys Trp Ile His Leu Glu Leu Arg Asn Arg Thr  
1 5 10 15

ccc tcc gat gtg aaa gaa ctt ttc ctg gac aac agt cag tca aat gaa 156  
Pro Ser Asp Val Lys Glu Leu Phe Leu Asp Asn Ser Gln Ser Asn Glu  
20 25 30

ggc aaa ttg gaa ggc ctc aca gat gaa ttt gaa gaa ctg gaa tta tta 204  
Gly Lys Leu Glu Gly Leu Thr Asp Glu Phe Glu Glu Leu Glu Leu Leu  
35 40 45

aat aca atc aac ata ggc ctc acc tca att gca aac ttg cca aag tta 252  
Asn Thr Ile Asn Ile Gly Leu Thr Ser Ile Ala Asn Leu Pro Lys Leu  
50 55 60

aac aaa ctt aag aag ctt gaa cta agc agt aac aga gcc tca gtg ggc 300  
Asn Lys Leu Lys Lys Leu Glu Leu Ser Ser Asn Arg Ala Ser Val Gly  
65 70 75

cta gaa gta ttg gca gaa aag tgt cca aac ctc ata cat cta aat tta 348  
 Leu Glu Val Leu Ala Glu Lys Cys Pro Asn Leu Ile His Leu Asn Leu  
 80 85 90 95

agt ggc aac aaa att aaa gac ctc agc aca ata gag ccc ctg aaa aag 396  
 Ser Gly Asn Lys Ile Lys Asp Leu Ser Thr Ile Glu Pro Leu Lys Lys  
 100 105 110

tta gaa aac ctc gag agc tta gac ctt ttc act tgc gag gta acc aac 444  
 Leu Glu Asn Leu Glu Ser Leu Asp Leu Phe Thr Cys Glu Val Thr Asn  
 115 120 125

ctg aac aac tactgagaaa agatgttcaa gctcctcctg caactcacat 493  
 Leu Asn Asn  
 130

atctcaacgg ctgtgaccgg gatgacaagg aggccccctaa ctcggtatggt gagggctttg 553

tggagtgcct ggatgacaag gaggaggatg aggatgagga ggagtatgat gaagatgctc 613

aggtaatgga agatgaggag gacgaggatg aggaggagga acgtgaagag gaggacgtga 673

gtggagacga ggaggagaag gatgaagggtt ataacaatgg agaggtatgat gatgaggaag 733

atgaagaaga gcttggtgaa gaagaaaggg gtcagaagcg aaaataagaa actgaagatg 793

agggagaaga cgatgcctaa gtggaataat ctattttgaa aaattccttt tgtgatttta 853

ctgttttttag ccgtatcccc tctccccccc cactctaata ctgccccctg aa 905

<210> 20

<211> 130

<212> PRT

<213> Homo sapiens

<400> 20

Met Glu Met Gly Lys Trp Ile His Leu Glu Leu Arg Asn Arg Thr Pro  
 1 5 10 15

Ser Asp Val Lys Glu Leu Phe Leu Asp Asn Ser Gln Ser Asn Glu Gly  
 20 25 30

Lys Leu Glu Gly Leu Thr Asp Glu Phe Glu Glu Leu Glu Leu Asn  
 35 40 45

Thr Ile Asn Ile Gly Leu Thr Ser Ile Ala Asn Leu Pro Lys Leu Asn  
 50 55 60

Lys Leu Lys Lys Leu Glu Leu Ser Ser Asn Arg Ala Ser Val Gly Leu  
65 70 75 80

Glu Val Leu Ala Glu Lys Cys Pro Asn Leu Ile His Leu Asn Leu Ser  
85 90 95

Gly Asn Lys Ile Lys Asp Leu Ser Thr Ile Glu Pro Leu Lys Lys Leu  
100 105 110

Glu Asn Leu Glu Ser Leu Asp Leu Phe Thr Cys Glu Val Thr Asn Leu  
115 120 125

Asn Asn  
130

<210> 21  
<211> 895  
<212> DNA  
<213> Homo sapiens

<220>  
<221> CDS  
<222> (66)..(767)

<400> 21  
gggttcggggg tttattgatt gaattcggct ggcacgagag cctctgcaga cagagagcgc 60

gagag atg gag atg ggc aga cgg att cat tca gag ctg cgg aac agg gcg 110  
Met Glu Met Gly Arg Arg Ile His Ser Glu Leu Arg Asn Arg Ala  
1 5 10 15

ccc tct gat gtg aaa gaa ctt gtc ctg gac aac agt cgg tcg aat gaa 158  
Pro Ser Asp Val Lys Glu Leu Val Leu Asp Asn Ser Arg Ser Asn Glu  
20 25 30

ggc aaa ctc gaa gcc ctc aca gat gaa ttt gaa gaa ctg gaa ttc tta 206  
Gly Lys Leu Glu Ala Leu Thr Asp Glu Phe Glu Glu Leu Glu Phe Leu  
35 40 45

agt aaa atc aac gga ggc ctc acc tca atc tca gac tta cca aag tta 254  
Ser Lys Ile Asn Gly Gly Leu Thr Ser Ile Ser Asp Leu Pro Lys Leu  
50 55 60

aag ttg aga aag ctt gaa cta aaa gtc tca ggg ggc ctg gaa gta ttg 302  
Lys Leu Arg Lys Leu Glu Leu Lys Val Ser Gly Gly Leu Glu Val Leu  
65 70 75

gca gaa aag tgt cca aac ctc acg cat cta tat tta agt ggc aac aaa 350  
Ala Glu Lys Cys Pro Asn Leu Thr His Leu Tyr Leu Ser Gly Asn Lys

80

85

90

95

att aaa gac ctc agc aca ata gag cca ctg aaa cag tta gaa aac ctc 398  
 Ile Lys Asp Leu Ser Thr Ile Glu Pro Leu Lys Gln Leu Glu Asn Leu  
 100 105 110

aag agc tta gac ctt ttc aat tgc gag gta acc aac ctg aac gac tac 446  
 Lys Ser Leu Asp Leu Phe Asn Cys Glu Val Thr Asn Leu Asn Asp Tyr  
 115 120 125

gga gaa aac gtg ttc aag ctt ctc ctg caa ctc aca tat ctc gac agc 494  
 Gly Glu Asn Val Phe Lys Leu Leu Leu Gln Leu Thr Tyr Leu Asp Ser  
 130 135 140

tgt tac tgg gac cac aag gag gcc cct tac tca gat att gag gac cac 542  
 Cys Tyr Trp Asp His Lys Glu Ala Pro Tyr Ser Asp Ile Glu Asp His  
 145 150 155

gtg gag ggc ctg gat gac gag gag gag ggt gag cat gag gag gag tat 590  
 Val Glu Gly Leu Asp Asp Glu Glu Glu Gly Glu His Glu Glu Glu Tyr  
 160 165 170 175

gat gaa gat gct cag gta gtg gaa gat gag gag ggc gag gag gag gag 638  
 Asp Glu Asp Ala Gln Val Val Glu Asp Glu Glu Gly Glu Glu Glu Glu  
 180 185 190

gag gaa ggt gaa gag gag gac gtg agt gga ggg gac gag gag gat gaa 686  
 Glu Glu Gly Glu Glu Glu Asp Val Ser Gly Gly Asp Glu Glu Asp Glu  
 195 200 205

gaa ggt tat aac gat gga gag gta gat ggc gag gaa gat gaa gaa gag 734  
 Glu Gly Tyr Asn Asp Gly Glu Val Asp Gly Glu Glu Asp Glu Glu Glu  
 210 215 220

ctt ggt gaa gaa gaa agg ggt cag aag cga aaa agagaacctg aagatgaggg 787  
 Leu Gly Glu Glu Glu Arg Gly Gln Lys Arg Lys  
 225 230

agaagatgat gactaagtag aataacctat ttgaaaaat tcctattgtg atttgactgt 847

ttttaccat atccccctc cccccccct ctaatcctgc ccctgaa 895

&lt;210&gt; 22

&lt;211&gt; 234

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 22

Met Glu Met Gly Arg Arg Ile His Ser Glu Leu Arg Asn Arg Ala Pro

1

5

10

15

Ser Asp Val Lys\* Glu Leu Val Leu Asp Asn Ser Arg Ser Asn Glu Gly  
 20 25 30  
 Lys Leu Glu Ala Leu Thr Asp Glu Phe Glu Glu Leu Glu Phe Leu Ser  
 35 40 45  
 Lys Ile Asn Gly Gly Leu Thr Ser Ile Ser Asp Leu Pro Lys Leu Lys  
 50 55 60  
 Leu Arg Lys Leu Glu Leu Lys Val Ser Gly Gly Leu Glu Val Leu Ala  
 65 70 75 80  
 Glu Lys Cys Pro Asn Leu Thr His Leu Tyr Leu Ser Gly Asn Lys Ile  
 85 90 95  
 Lys Asp Leu Ser Thr Ile Glu Pro Leu Lys Gln Leu Glu Asn Leu Lys  
 100 105 110  
 Ser Leu Asp Leu Phe Asn Cys Glu Val Thr Asn Leu Asn Asp Tyr Gly  
 115 120 125  
 Glu Asn Val Phe Lys Leu Leu Leu Gln Leu Thr Tyr Leu Asp Ser Cys  
 130 135 140  
 Tyr Trp Asp His Lys Glu Ala Pro Tyr Ser Asp Ile Glu Asp His Val  
 145 150 155 160  
 Glu Gly Leu Asp Asp Glu Glu Glu Gly Glu His Glu Glu Glu Tyr Asp  
 165 170 175  
 Glu Asp Ala Gln Val Val Glu Asp Glu Glu Gly Glu Glu Glu Glu  
 180 185 190  
 Glu Gly Glu Glu Glu Asp Val Ser Gly Gly Asp Glu Glu Asp Glu Glu  
 195 200 205  
 Gly Tyr Asn Asp Gly Glu Val Asp Gly Glu Glu Asp Glu Glu Glu Leu  
 210 215 220  
 Gly Glu Glu Glu Arg Gly Gln Lys Arg Lys  
 225 230

&lt;210&gt; 23

&lt;211&gt; 895

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

<220>  
<221> CDS  
<222> (66)..(767)

<400> 23

gggttcgggg tttattgatt gaattccgcc ggcgcgaggag cctctgcaga gagggagcgc 60

gagag atg gag atg ggc aga cgg att cat tta gag ctg cgg aac agg acg 110  
Met Glu Met Gly Arg Arg Ile His Leu Glu Leu Arg Asn Arg Thr  
1 5 10 15

ccc tct gat gtg aaa gaa ctt gtc ctg gac aac agt cgg tcg aat gaa 158  
Pro Ser Asp Val Lys Glu Leu Val Leu Asp Asn Ser Arg Ser Asn Glu  
20 25 30

ggc aaa ctc gaa ggc ctc aca gat gaa ttt gaa gaa ctg gaa ttc tta 206  
Gly Lys Leu Glu Gly Leu Thr Asp Glu Phe Glu Glu Leu Glu Phe Leu  
35 40 45

agt aca atc aac gta ggc ctc acc tca atc gca aac tta cca aag tta 254  
Ser Thr Ile Asn Val Gly Leu Thr Ser Ile Ala Asn Leu Pro Lys Leu  
50 55 60

aag ttg aga aag ctt gaa cta aga gtc tca ggg ggc ctg gaa gta ttg 302  
Lys Leu Arg Lys Leu Glu Leu Arg Val Ser Gly Gly Leu Glu Val Leu  
65 70 75

gca gaa aag tgt cca aac ctc acg cac cta tat tta agt ggc aac aaa 350  
Ala Glu Lys Cys Pro Asn Leu Thr His Leu Tyr Leu Ser Gly Asn Lys  
80 85 90 95

att aaa gac ctc agc aca ata gag cca ctg aaa cag tta gaa aac ctc 398  
Ile Lys Asp Leu Ser Thr Ile Glu Pro Leu Lys Gln Leu Glu Asn Leu  
100 105 110

aag agc tta gac ctt ttc aat tgc gag gta acc aac ctg aac gac tac 446  
Lys Ser Leu Asp Leu Phe Asn Cys Glu Val Thr Asn Leu Asn Asp Tyr  
115 120 125

gga gaa aac gtg ttc aag ctt ctc ctg caa ctc aca tat ctc gac agc 494  
Gly Glu Asn Val Phe Lys Leu Leu Leu Gln Leu Thr Tyr Leu Asp Ser  
130 135 140

tgt tac tgg gac cac aag gag gcc cct tac tca gat att gag gac cac 542  
Cys Tyr Trp Asp His Lys Glu Ala Pro Tyr Ser Asp Ile Glu Asp His  
145 150 155

gtg gag ggc ctg gat gac gag gag gag ggt gag cat gag gag gag tat 590  
Val Glu Gly Leu Asp Asp Glu Glu Glu Gly Glu His Glu Glu Glu Tyr  
160 165 170 175

gat gaa gat gct cag gta gtg gaa gat gag gag ggc gag gag ggg gag 638  
 Asp Glu Asp Ala Gln Val Val Glu Asp Glu Glu Gly Glu Glu Gly Glu  
 180 185 190

gag gaa ggt gaa gag gag gac gtg agt gga ggg gac gag gag gat gaa 686  
 Glu Glu Gly Glu Glu Glu Asp Val Ser Gly Gly Asp Glu Glu Asp Glu  
 195 200 205

gaa ggt tat aac gat gga gag gta gat gac gag gaa gat gaa gaa gag 734  
 Glu Gly Tyr Asn Asp Gly Glu Val Asp Asp Glu Glu Asp Glu Glu Glu  
 210 215 220

ctt ggt gaa gaa gaa agg ggt cag aag cga aaa cgagaacctg aagatgaggg 787  
 Leu Gly Glu Glu Glu Arg Gly Gln Lys Arg Lys  
 225 230

agaagatgat gactaagtgg aataacctat ttgaaaaat tcctattgtg atttgactgt 847  
 ttttaccat atccctctc ccccccct ctaatcctgc ccctgaa 895

<210> 24

<211> 234

<212> PRT

<213> Homo sapiens

<400> 24

Met Glu Met Gly Arg Arg Ile His Leu Glu Leu Arg Asn Arg Thr Pro  
 1 5 10 15

Ser Asp Val Lys Glu Leu Val Leu Asp Asn Ser Arg Ser Asn Glu Gly  
 20 25 30

Lys Leu Glu Gly Leu Thr Asp Glu Phe Glu Glu Leu Glu Phe Leu Ser  
 35 40 45

Thr Ile Asn Val Gly Leu Thr Ser Ile Ala Asn Leu Pro Lys Leu Lys  
 50 55 60

Leu Arg Lys Leu Glu Leu Arg Val Ser Gly Gly Leu Glu Val Leu Ala  
 65 70 75 80

Glu Lys Cys Pro Asn Leu Thr His Leu Tyr Leu Ser Gly Asn Lys Ile  
 85 90 95

Lys Asp Leu Ser Thr Ile Glu Pro Leu Lys Gln Leu Glu Asn Leu Lys  
 100 105 110

Ser Leu Asp Leu Phe Asn Cys Glu Val Thr Asn Leu Asn Asp Tyr Gly

115

120

125

Glu Asn Val Phe Lys Leu Leu Leu Gln Leu Thr Tyr Leu Asp Ser Cys  
 130 135 140

Tyr Trp Asp His Lys Glu Ala Pro Tyr Ser Asp Ile Glu Asp His Val  
 145 150 155 160

Glu Gly Leu Asp Asp Glu Glu Glu Gly Glu His Glu Glu Glu Tyr Asp  
 165 170 175

Glu Asp Ala Gln Val Val Glu Asp Glu Glu Gly Glu Glu Gly Glu Glu  
 180 185 190

Glu Gly Glu Glu Glu Asp Val Ser Gly Gly Asp Glu Glu Asp Glu Glu  
 195 200 205

Gly Tyr Asn Asp Gly Glu Val Asp Asp Glu Glu Asp Glu Glu Glu Leu  
 210 215 220

Gly Glu Glu Glu Arg Gly Gln Lys Arg Lys  
 225 230

&lt;210&gt; 25

&lt;211&gt; 907

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 25

gggttcgggg tttattgatt gaattccgcc ggcgcgggag cctctgcaga gagagagcgc 60

gagagatgga gatgggcaga cggattcatt tagagctgag gaacaggacg ccctctgatg 120

tgaagaact tgtcctggac aacagtcggt cgaatgaagg aaaaactcag ggcctcacag 180

atgaatttga agaactggaa ttcttaagta caatcaacgt aggcctcacc tcaatcgcaa 240

acttaccaaa gttaaacaaa cttagaagc ttgaactaag cgataacaga gtctcagggg 300

gcctggaagt attggcagaa aagtgtccga acctcagca tctaaattta agtggcaaca 360

aaattaaaga cctcagcaca atagagccac tgaaaaagtt agaaaacctc aagagcttag 420

accttttcaa ttgagaggta accaacctga acgactaccg agaaaatgtg ttcaagctcc 480

tcccgcaact cacatatctc gacggctatg accgggacga caaggaggcc cctgactcgg 540

atgctgaggg ctacgtggag ggcctggatg atgaggagga ggatgaggat gaggaggagt 600



atgatgaaga tgctcaggta gtggaagacg aggaggacga ggatgaggag gaggaaggtg 660  
aagaggagga cgtgagtgga gaggaggagg aggatgaaga aggttataac gatggagagg 720  
tagatgacga ggaagatgaa gaagagcttg gtgaagaaga aaggggtcag aagcgaaaac 780  
gagaacctga agatgaggga gaagatgatg actaagtgga ataacctatt ttgaaaaatt 840  
cctattgtga ttgactgtt ttaccata tcccctctcc cccccccctc taatcctgcc 900  
ccctgaa 907

<210> 26  
<211> 905  
<212> DNA  
<213> Homo sapiens

<220>  
<221> CDS  
<222> (64)..(453)

<400> 26  
gggttcgggg ttattgtgtt gaattccgct ggctcaggag cctctgcaga gaaagcgtga 60

gag atg gag atg ggc aaa tgg att cat tta gag ctg cgg aac agg acg 108  
Met Glu Met Gly Lys Trp Ile His Leu Glu Leu Arg Asn Arg Thr  
1 5 10 15

ccc tcc gat gtg aaa gaa ctt ttc ctg gac aac agt cag tca aat gaa 156  
Pro Ser Asp Val Lys Glu Leu Phe Leu Asp Asn Ser Gln Ser Asn Glu  
20 25 30

ggc aaa ttg gaa ggc ctc aca gat gaa ttt gaa gaa ctg gaa tta tta 204  
Gly Lys Leu Glu Gly Leu Thr Asp Glu Phe Glu Glu Leu Glu Leu Leu  
35 40 45

aat aca atc aac ata ggc ctc acc tca att gca aac ttg cca aag tta 252  
Asn Thr Ile Asn Ile Gly Leu Thr Ser Ile Ala Asn Leu Pro Lys Leu  
50 55 60

aac aaa ctt aag aag ctt gaa cta agc agt aac aga gcc tca gtg ggc 300  
Asn Lys Leu Lys Lys Leu Glu Leu Ser Ser Asn Arg Ala Ser Val Gly  
65 70 75

cta gaa gta ttg gca gaa aag tgt cca aac ctc ata cat cta aat tta 348  
Leu Glu Val Leu Ala Glu Lys Cys Pro Asn Leu Ile His Leu Asn Leu  
80 85 90 95

agt ggc aac aaa att aaa gac ctc agc aca ata gag ccc ctg aaa aag 396

Ser Gly Asn Lys Ile Lys Asp Leu Ser Thr Ile Glu Pro Leu Lys Lys  
 100 105 110  
 tta gaa aac ctc gag agc tta gac ctt ttc act tgc gag gta acc aac 444  
 Leu Glu Asn Leu Glu Ser Leu Asp Leu Phe Thr Cys Glu Val Thr Asn  
 115 120 125

ctg aac aac tactgagaaa agatgttcaa gctcctcctg caactcacat 493  
 Leu Asn Asn  
 130

atctcaacgg ctgtgacccg gatgacaagg aggccccctaa ctcgatggt gagggctttg 553  
 tggagtgcct gcatgacaag gaggaggatg aggatgagga ggagtatgat gaagatgctc 613  
 aggtaatgga agatgaggag gacgaggatg aggaggagga acgtgaagag gaggacgtga 673  
 gtggagacga ggaggagaag gatgaagggt ataacaatgg agaggtagat gatgaggaag 733  
 atgaagaaga gcttggtgaa gaagaaagg gtcagaagcg aaaataagaa actgaagatg 793  
 agggagaaga cgatgcctaa gtggaataat ctattttgaa aaattccttt tgtgatttta 853  
 ctgttttttag ccatatcccc tctccccccc cactctaate ctgccccctg aa 905

<210> 27  
 <211> 130  
 <212> PRT  
 <213> Homo sapiens

<400> 27  
 Met Glu Met Gly Lys Trp Ile His Leu Glu Leu Arg Asn Arg Thr Pro  
 1 5 10 15

Ser Asp Val Lys Glu Leu Phe Leu Asp Asn Ser Gln Ser Asn Glu Gly  
 20 25 30

Lys Leu Glu Gly Leu Thr Asp Glu Phe Glu Glu Leu Glu Leu Leu Asn  
 35 40 45

Thr Ile Asn Ile Gly Leu Thr Ser Ile Ala Asn Leu Pro Lys Leu Asn  
 50 55 60

Lys Leu Lys Lys Leu Glu Leu Ser Ser Asn Arg Ala Ser Val Gly Leu  
 65 70 75 80

Glu Val Leu Ala Glu Lys Cys Pro Asn Leu Ile His Leu Asn Leu Ser  
 85 90 95

Gly Asn Lys Ile Lys Asp Leu Ser Thr Ile Glu Pro Leu Lys Lys Leu  
 100 105 110

Glu Asn Leu Glu Ser Leu Asp Leu Phe Thr Cys Glu Val Thr Asn Leu  
 115 120 125

Asn Asn  
 130

<210> 28  
 <211> 907  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> CDS  
 <222> (66)..(812)

<400> 28  
 ggggttcggggg tttattgatt gaattccgcc ggcgcgggag cctctgcaga gagagagcgc 60

gagag atg gag atg ggc aga cgg att cat cta gag ctg cgg aac agg acg 110  
 Met Glu Met Gly Arg Arg Ile His Leu Glu Leu Arg Asn Arg Thr  
 1 5 10 15

ccc tct gat gtg aaa gaa ctt gtc ctg gtc aac agt cgg tcg aat gaa 158  
 Pro Ser Asp Val Lys Glu Leu Val Leu Val Asn Ser Arg Ser Asn Glu  
 20 25 30

ggc aaa ctc gaa ggc ctc aca gat gaa ttt gaa gaa ctg gaa ttc tta 206  
 Gly Lys Leu Glu Gly Leu Thr Asp Glu Phe Glu Glu Leu Glu Phe Leu  
 35 40 45

agt aca atc aac gta ggc ctc acc tca atc gca aac tta cca aag tta 254  
 Ser Thr Ile Asn Val Gly Leu Thr Ser Ile Ala Asn Leu Pro Lys Leu  
 50 55 60

aac aaa ctt aag aag ctt gaa cta agc gat aac aga gtc tca ggg ggc 302  
 Asn Lys Leu Lys Lys Leu Glu Leu Ser Asp Asn Arg Val Ser Gly Gly  
 65 70 75

cta gaa gta ttg gca gaa aag tgt ccg aac ctc acg cat cta aat tta 350  
 Leu Glu Val Leu Ala Glu Lys Cys Pro Asn Leu Thr His Leu Asn Leu  
 80 85 90 95

agt ggc aac aaa att aaa gac ctc agc aca ata gag cca ctg aaa aag 398  
 Ser Gly Asn Lys Ile Lys Asp Leu Ser Thr Ile Glu Pro Leu Lys Lys  
 100 105 110

tta gaa aac ctc aag agc tta gac ctt ttc aat tgc gag gta acc aac 446  
 Leu Glu Asn Leu Lys Ser Leu Asp Leu Phe Asn Cys Glu Val Thr Asn  
 115 120 125

ctg aac gac tac cga gaa aat gtg ttc aag ctc ctc ccg caa ctc aca 494  
 Leu Asn Asp Tyr Arg Glu Asn Val Phe Lys Leu Leu Pro Gln Leu Thr  
 130 135 140

tat ctc gac ggc tat gac cgg gac gac aag gag gcc cct gac tcg gat 542  
 Tyr Leu Asp Gly Tyr Asp Arg Asp Asp Lys Glu Ala Pro Asp Ser Asp  
 145 150 155

gct gag ggc tac gtg gag ggc ctg gat gat gag gag gag gat gag gat 590  
 Ala Glu Gly Tyr Val Glu Gly Leu Asp Asp Glu Glu Glu Asp Glu Asp  
 160 165 170 175

gag gag gag tat gat gaa gat gct cag gta gtg gaa gac gag gag gac 638  
 Glu Glu Glu Tyr Asp Glu Asp Ala Gln Val Val Glu Asp Glu Glu Asp  
 180 185 190

gag gat gag gag gag gaa ggt gaa gag gag gac gtg agt gga gag gag 686  
 Glu Asp Glu Glu Glu Glu Gly Glu Glu Glu Asp Val Ser Gly Glu Glu  
 195 200 205

gag gag gat gaa gaa ggt tat aac gat gga gag gta gat gac gag gaa 734  
 Glu Glu Asp Glu Glu Gly Tyr Asn Asp Gly Glu Val Asp Asp Glu Glu  
 210 215 220

gat gaa gaa gag ctt ggt gaa gaa gaa agg ggt cag aag cga aaa cga 782  
 Asp Glu Glu Glu Leu Gly Glu Glu Glu Arg Gly Gln Lys Arg Lys Arg  
 225 230 235

gaa cct gaa gat gag gga gaa gat gat gac taagtgaat aacctatattt 832  
 Glu Pro Glu Asp Glu Gly Glu Asp Asp Asp  
 240 245

gaaaaattcc tattgtgatt tgactgtttt tacccatata cctctcacc cccccctcta 892  
 atcctgcccc ctgaa 907

<210> 29  
 <211> 249  
 <212> PRT  
 <213> Homo sapiens

<400> 29  
 Met Glu Met Gly Arg Arg Ile His Leu Glu Leu Arg Asn Arg Thr Pro  
 1 5 10 15

Ser Asp Val Lys Glu Leu Val Leu Val Asn Ser Arg Ser Asn Glu Gly  
 20 25 30  
 Lys Leu Glu Gly Leu Thr Asp Glu Phe Glu Glu Leu Glu Phe Leu Ser  
 35 40 45  
 Thr Ile Asn Val Gly Leu Thr Ser Ile Ala Asn Leu Pro Lys Leu Asn  
 50 55 60  
 Lys Leu Lys Lys Leu Glu Leu Ser Asp Asn Arg Val Ser Gly Gly Leu  
 65 70 75 80  
 Glu Val Leu Ala Glu Lys Cys Pro Asn Leu Thr His Leu Asn Leu Ser  
 85 90 95  
 Gly Asn Lys Ile Lys Asp Leu Ser Thr Ile Glu Pro Leu Lys Lys Leu  
 100 105 110  
 Glu Asn Leu Lys Ser Leu Asp Leu Phe Asn Cys Glu Val Thr Asn Leu  
 115 120 125  
 Asn Asp Tyr Arg Glu Asn Val Phe Lys Leu Leu Pro Gln Leu Thr Tyr  
 130 135 140  
 Leu Asp Gly Tyr Asp Arg Asp Asp Lys Glu Ala Pro Asp Ser Asp Ala  
 145 150 155 160  
 Glu Gly Tyr Val Glu Gly Leu Asp Asp Glu Glu Glu Asp Glu Asp Glu  
 165 170 175  
 Glu Glu Tyr Asp Glu Asp Ala Gln Val Val Glu Asp Glu Glu Asp Glu  
 180 185 190  
 Asp Glu Glu Glu Glu Gly Glu Glu Glu Asp Val Ser Gly Glu Glu Glu  
 195 200 205  
 Glu Asp Glu Glu Gly Tyr Asn Asp Gly Glu Val Asp Asp Glu Glu Asp  
 210 215 220  
 Glu Glu Glu Leu Gly Glu Glu Glu Arg Gly Gln Lys Arg Lys Arg Glu  
 225 230 235 240  
 Pro Glu Asp Glu Gly Glu Asp Asp Asp  
 245

<210> 30  
 <211> 907  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> CDS  
 <222> (66)..(455)

<400> 30

gggttcgggg tttattgatt gaattccgcc ggcgcgaggag cctctgcaga gagagagcgc 60

gagag atg gag atg ggc aga cgg att cat tta gag ctg cgg aac agg acg 110  
 Met Glu Met Gly Arg Arg Ile His Leu Glu Leu Arg Asn Arg Thr

ccc tct gat gtg aaa gaa ctt gtc ctg gac aac agt cgg tcg aat gaa 158  
 Pro Ser Asp Val Lys Glu Leu Val Leu Asp Asn Ser Arg Ser Asn Glu  
 20 25 30

ggc aaa ctc gaa ggc ctc aca gat gaa ttt gaa gaa ctg gaa ttc tta 206  
 Gly Lys Leu Glu Gly Leu Thr Asp Glu Phe Glu Glu Leu Glu Phe Leu  
 35 40 45

agt aca atc aac gta ggc ctc acc tca atc gca aac tta cca aag tta 254  
 Ser Thr Ile Asn Val Gly Leu Thr Ser Ile Ala Asn Leu Pro Lys Leu  
 50 55 60

aac aaa ctt aag aag ctt gaa cta agc gat aac aga gtc tca ggg ggc 302  
 Asn Lys Leu Lys Lys Leu Glu Leu Ser Asp Asn Arg Val Ser Gly Gly  
 65 70 75

cta gaa gta ttg gca gaa aag tgt cca aac ctc ata cat cta aat tta 350  
 Leu Glu Val Leu Ala Glu Lys Cys Pro Asn Leu Ile His Leu Asn Leu  
 80 85 90 95

agt ggc aac aaa att aaa gac ctc agc aca ata gag ccc ctg aaa aag 398  
 Ser Gly Asn Lys Ile Lys Asp Leu Ser Thr Ile Glu Pro Leu Lys Lys  
 100 105 110

tta gaa aac ctc gag agc tta gac ctt ttc act tgc gag gta acc aac 446  
 Leu Glu Asn Leu Glu Ser Leu Asp Leu Phe Thr Cys Glu Val Thr Asn  
 115 120 125

ctg aac aac tactgagaaa agatgttcaa gctcctcctg caactcacat 495  
 Leu Asn Asn  
 130

atctcaacgg ctgtgacccg gatgacaagg aggccccctaa ctcgatgggt gagggctttg 555

tggagtgcct ggatgacaag gaggaggatg aggatgagga ggagtatgat gaagatgctc 615

aggtaatgga agatgaggag gacgaggatg aggaggagga acgtgaagag gaggacgtga 675

gtggagacga ggaggagaag gatgaagggtt ataacaatgg agaggtagat gatgaggaag 735  
 atgaagaaga gcttggtgaa gaagaaaggg gtcagaagcg aaaataagaa actgaagatg 795  
 agggagaaga cgatgcctaa gtggaataat ctattttgaa aaattcctat tgtgatttga 855  
 ctgtttttac ccatatcccc tctccccccc ccttctaatac ctgccccctg aa 907

<210> 31  
 <211> 130  
 <212> PRT  
 <213> Homo sapiens

<400> 31  
 Met Glu Met Gly Arg Arg Ile His Leu Glu Leu Arg Asn Arg Thr Pro  
 1 5 10 15  
 Ser Asp Val Lys Glu Leu Val Leu Asp Asn Ser Arg Ser Asn Glu Gly  
 20 25 30  
 Lys Leu Glu Gly Leu Thr Asp Glu Phe Glu Glu Leu Glu Phe Leu Ser  
 35 40 45  
 Thr Ile Asn Val Gly Leu Thr Ser Ile Ala Asn Leu Pro Lys Leu Asn  
 50 55 60  
 Lys Leu Lys Lys Leu Glu Leu Ser Asp Asn Arg Val Ser Gly Gly Leu  
 65 70 75 80  
 Glu Val Leu Ala Glu Lys Cys Pro Asn Leu Ile His Leu Asn Leu Ser  
 85 90 95  
 Gly Asn Lys Ile Lys Asp Leu Ser Thr Ile Glu Pro Leu Lys Lys Leu  
 100 105 110  
 Glu Asn Leu Glu Ser Leu Asp Leu Phe Thr Cys Glu Val Thr Asn Leu  
 115 120 125  
 Asn Asn  
 130

<210> 32  
 <211> 908  
 <212> DNA  
 <213> Homo sapiens

<400> 32  
 gggttcggggg tttattgatt gaattccgcc ggcgcggggag cctctgcaga gagagagcgc 60

ggagagatgg agatgggcag acggattcat ttagagctgc ggaacaggac gccctctgat 120  
 gtgaaagaac ttgtcctgga caacagtcgg tcgaatgaag gcaaactcga aggcctcaca 180  
 gatgaatttg aagaactgga attcttaagt acaatcaacg taggcctcac ctcaatcgca 240  
 aacttaccaa agttaaacia acttaagaag cttgaactaa gcgataacag agtctcaggg 300  
 ggcttggaag tattggcaga aaagtgtccg aacctcacgc atctaaattt aagtggcaac 360  
 aaaattaaag acctcagcac aatagagcca ctgaaaaagt tagaaaacct caagagctta 420  
 gaccttttca attgcgaggt aaccaacctg aacgactacc gagaaaatgt gttcaagctc 480  
 ctcccgcaac tcacatatct cgacggctat gaccgggacg acaaggaggc ccctgactcg 540  
 gatgctgagg gctacgtgga gggcctggat gatgaggagg aggatgagga tgaggaggag 600  
 tatgatgaag atgctcaggt agtggagac gaggaggacg aggatgagga ggaggaaggt 660  
 gaagaggagg acgtgagtg agaggaggag gaggatgaag aaggttataa cgatggagag 720  
 gtagatgacg aggaagatga agaagagctt ggtgaagaag aaaggggtca gaagcgaaaa 780  
 cgagaacctg aagatgaggg agaagatgat gactaagtgg aataacctat ttgaaaaat 840  
 tcctattgtg atttgactgt ttttacctat atcccctctc cccccccct ctaatcctgc 900  
 cccctgaa 908

<210> 33  
 <211> 906  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> CDS  
 <222> (66)..(812)

<400> 33  
 gggttcgggg tttattgatt gaattccgct ggcgcgggag cctctgcaga gagagagcgc 60  
 gagag atg gag atg ggc aga cgg att cat tta gag ctg cgg aac agg acg 110  
 Met Glu Met Gly Arg Arg Ile His Leu Glu Leu Arg Asn Arg Thr  
 1 5 10 15  
 ccc tct gat gtg aaa gaa ctt gtc ctg gac aac agt cgg tcg aat gaa 158  
 Pro Ser Asp Val Lys Glu Leu Val Leu Asp Asn Ser Arg Ser Asn Glu



20

25

30

ggc aaa ctc gaa ggc ctc aca gat gaa ttt gaa gaa ctg gaa ttc tta 206  
 Gly Lys Leu Glu Gly Leu Thr Asp Glu Phe Glu Glu Leu Glu Phe Leu  
                   35                                  40                                  45

agt aca atc aac gta ggc ctc acc tca atc gca aac tta cca aag tta 254  
 Ser Thr Ile Asn Val Gly Leu Thr Ser Ile Ala Asn Leu Pro Lys Leu  
                   50                                  55                                  60

aac aaa ctt aag aag ctt gaa cta agc agt aac aga gtc tca ggg ggc 302  
 Asn Lys Leu Lys Lys Leu Glu Leu Ser Ser Asn Arg Val Ser Gly Gly  
                   65                                  70                                  75

cta gaa gta ttg gca gaa aag tgt cca aac ctc acg cat cta aat tta 350  
 Leu Glu Val Leu Ala Glu Lys Cys Pro Asn Leu Thr His Leu Asn Leu  
                   80                                  85                                  90                                  95

agt ggc aac aaa att aaa gac ctc agc aca ata gag cca ctg aaa aag 398  
 Ser Gly Asn Lys Ile Lys Asp Leu Ser Thr Ile Glu Pro Leu Lys Lys  
                                   100                                  105                                  110

tta gaa aac ctc aag agc tta gac ctt ttc aat tgc gag gta acc aac 446  
 Leu Glu Asn Leu Lys Ser Leu Asp Leu Phe Asn Cys Glu Val Thr Asn  
                                   115                                  120                                  125

ctg aac gac tac cga gaa aat gtg ttc aag ctc ctc ctg caa ctc aca 494  
 Leu Asn Asp Tyr Arg Glu Asn Val Phe Lys Leu Leu Leu Gln Leu Thr  
                                   130                                  135                                  140

tat ctc gac ggc tgt gac cgg gac gac aag gag gcc cct gac tcg gat 542  
 Tyr Leu Asp Gly Cys Asp Arg Asp Asp Lys Glu Ala Pro Asp Ser Asp  
                   145                                  150                                  155

gct gag ggc tac gtg gag ggc ctg gat gac gag gag gag gat gag gat 590  
 Ala Glu Gly Tyr Val Glu Gly Leu Asp Asp Glu Glu Glu Asp Glu Asp  
                   160                                  165                                  170                                  175

gag gag gag tat gat gaa gat gct cag gta gtg gaa gat gag gag gac 638  
 Glu Glu Glu Tyr Asp Glu Asp Ala Gln Val Val Glu Asp Glu Glu Asp  
                                   180                                  185                                  190

gag gat gag gag gag gaa ggt gaa gag gag gac gtg agt gga gag gag 686  
 Glu Asp Glu Glu Glu Glu Gly Glu Glu Glu Asp Val Ser Gly Glu Glu  
                                   195                                  200                                  205

gag gag gat gaa gaa ggt tat aac gat gga gag gta gat gac gag gaa 734  
 Glu Glu Asp Glu Glu Gly Tyr Asn Asp Gly Glu Val Asp Asp Glu Glu  
                                   210                                  215                                  220

gat gaa gaa gag ctt ggt gaa gaa gaa agg ggt cag aag cga aaa gag 782  
 Asp Glu Glu Glu Leu Gly Glu Glu Glu Arg Gly Gln Lys Arg Lys Glu  
 225 230 235

aac ctg aag atg agg gag aag atg atg act aagtgaata acctattttg 832  
 Asn Leu Lys Met Arg Glu Lys Met Met Thr  
 240 245

aaaaattcct attgtgattt gactgttttt acccatatcc cctctccccc cccctcttaa 892  
 tcctgcccc tgaa 906

<210> 34  
 <211> 249  
 <212> PRT  
 <213> Homo sapiens

<400> 34  
 Met Glu Met Gly Arg Arg Ile His Leu Glu Leu Arg Asn Arg Thr Pro  
 1 5 10 15

Ser Asp Val Lys Glu Leu Val Leu Asp Asn Ser Arg Ser Asn Glu Gly  
 20 25 30

Lys Leu Glu Gly Leu Thr Asp Glu Phe Glu Glu Leu Glu Phe Leu Ser  
 35 40 45

Thr Ile Asn Val Gly Leu Thr Ser Ile Ala Asn Leu Pro Lys Leu Asn  
 50 55 60

Lys Leu Lys Lys Leu Glu Leu Ser Ser Asn Arg Val Ser Gly Gly Leu  
 65 70 75 80

Glu Val Leu Ala Glu Lys Cys Pro Asn Leu Thr His Leu Asn Leu Ser  
 85 90 95

Gly Asn Lys Ile Lys Asp Leu Ser Thr Ile Glu Pro Leu Lys Lys Leu  
 100 105 110

Glu Asn Leu Lys Ser Leu Asp Leu Phe Asn Cys Glu Val Thr Asn Leu  
 115 120 125

Asn Asp Tyr Arg Glu Asn Val Phe Lys Leu Leu Leu Gln Leu Thr Tyr  
 130 135 140

Leu Asp Gly Cys Asp Arg Asp Asp Lys Glu Ala Pro Asp Ser Asp Ala  
 145 150 155 160

Glu Gly Tyr Val Glu Gly Leu Asp Asp Glu Glu Glu Asp Glu Asp Glu

165

170

175

Glu Glu Tyr Asp Glu Asp Ala Gln Val Val Glu Asp Glu Glu Asp Glu  
180 185 190

Asp Glu Glu Glu Glu Gly Glu Glu Glu Asp Val Ser Gly Glu Glu Glu  
195 200 205

Glu Asp Glu Glu Gly Tyr Asn Asp Gly Glu Val Asp Asp Glu Glu Asp  
210 215 220

Glu Glu Glu Leu Gly Glu Glu Glu Arg Gly Gln Lys Arg Lys Glu Asn  
225 230 235 240

Leu Lys Met Arg Glu Lys Met Met Thr  
245

&lt;210&gt; 35

&lt;211&gt; 26

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 35

tatgctagcg gggtcgggggt ttattg

26

&lt;210&gt; 36

&lt;211&gt; 29

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 36

gattctagat ggtaagtttg cgattgagg

29

&lt;210&gt; 37

&lt;211&gt; 29

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 37

gaatctagaa ggaggaggaa ggtgaagag

29

&lt;210&gt; 38

&lt;211&gt; 29

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

<400> 38  
ctatctagat tcagggggca ggattagag

29

<210> 39  
<211> 24  
<212> DNA  
<213> Homo sapiens

<400> 39  
gaggtttatt gattgaattc ggct

24

<210> 40  
<211> 24  
<212> DNA  
<213> Homo sapiens

<400> 40  
ccccagtaca cttttcccgt ctca

24

<210> 41  
<211> 12  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: recognition  
sequence

<400> 41  
tttttctttt tc

12

<210> 42  
<211> 10  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: recognition  
sequence

<400> 42  
ttaaaattca

10

<210> 43  
<211> 10

<212> DNA  
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: recognition  
sequence

<400> 43  
atgtaaaaca

10

<210> 44  
<211> 11  
<212> DNA  
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: recognition  
sequence

<400> 44  
aagataaaac c

11

<210> 45  
<211> 10  
<212> DNA  
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: recognition  
sequence

<400> 45  
ccactgggga

10

<210> 46  
<211> 13  
<212> DNA  
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: recognition  
sequence

<400> 46  
ctctctctct ctc

13

<210> 47  
<211> 11  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: recognition  
sequence

<400> 47  
aaaacataaa t

11

<210> 48  
<211> 131  
<212> PRT  
<213> Homo sapiens

<220>  
<223> Description of Artificial Sequence: recognition  
sequence

<400> 48  
Met Glu Met Gly Lys Trp Ile His Leu Glu Leu Arg Asn Arg Thr Pro  
1 5 10 15  
Ser Asp Val Lys Glu Leu Phe Leu Asp Asn Ser Gln Ser Asn Glu Gly  
20 25 30  
Lys Leu Glu Gly Leu Ala Asp Glu Phe Glu Glu Leu Glu Leu Leu Asn  
35 40 45  
Thr Ile Asn Ile Gly Leu Ser Ser Ile Ala Asn Leu Ala Lys Leu Asn  
50 55 60  
Lys Leu Lys Lys Leu Glu Leu Ser Ser Asn Arg Ala Ser Val Gly Leu  
65 70 75 80  
Glu Val Leu Ala Glu Lys Cys Pro Asn Leu Ile His Leu Asn Leu Ser  
85 90 95  
Gly Asn Lys Ile Lys Asp Leu Ser Thr Ile Glu Pro Leu Lys Lys Leu  
100 105 110  
Glu Asn Leu Glu Ser Leu Asp Leu Phe Thr Cys Glu Val Thr Asn Leu  
115 120 125  
Asn Asn Tyr  
130

<210> 49  
<211> 234  
<212> PRT  
<213> Homo sapiens

<220>

<223> Description of Artificial Sequence: recognition  
sequence

<400> 49

Met Glu Met Gly Arg Arg Ile His Ser Glu Leu Arg Asn Arg Ala Pro  
1 5 10 15  
Ser Asp Val Lys Glu Leu Ala Leu Asp Asn Ser Arg Ser Asn Glu Gly  
20 25 30  
Lys Leu Glu Ala Leu Thr Asp Glu Phe Glu Glu Leu Glu Phe Leu Ser  
35 40 45  
Lys Ile Asn Gly Gly Leu Thr Ser Ile Ser Asp Leu Pro Lys Leu Lys  
50 55 60  
Leu Arg Lys Leu Glu Leu Arg Val Ser Gly Gly Leu Glu Val Leu Ala  
65 70 75 80  
Glu Lys Cys Pro Asn Leu Thr His Leu Tyr Leu Ser Gly Asn Lys Ile  
85 90 95  
Lys Asp Leu Ser Thr Ile Glu Pro Leu Lys Gln Leu Glu Asn Leu Lys  
100 105 110  
Ser Leu Asp Leu Phe Asn Cys Glu Val Thr Asn Leu Asn Asp Tyr Gly  
115 120 125  
Glu Asn Val Phe Lys Leu Leu Leu Gln Leu Thr Tyr Leu Asp Ser Cys  
130 135 140  
Tyr Trp Asp His Lys Glu Ala Pro Tyr Ser Asp Ile Glu Asp His Val  
145 150 155 160  
Glu Gly Leu Asp Asp Glu Glu Glu Gly Glu His Glu Glu Glu Tyr Asp  
165 170 175  
Glu Asp Ala Gln Val Val Glu Asp Glu Glu Gly Glu Glu Glu Glu Glu  
180 185 190  
Glu Gly Glu Glu Glu Asp Val Ser Gly Gly Asp Glu Glu Asp Glu Glu  
195 200 205

Gly Tyr Asn Asp Gly Glu Val Asp Gly Glu Glu Asp Glu Glu Glu Leu  
210 215 220

Gly Glu Glu Glu Arg Gly Gln Lys Arg Lys  
225 230

<210> 50  
<211> 17  
<212> DNA  
<213> Homo sapiens

<400> 50  
gggttcgggg tttattg

17

*And*  
*to*  
✓  
<210> 51  
<211> 20  
<212> DNA  
<213> Homo sapiens

<400> 51  
ctctaattcct gccccctgaa

20